REMARKS

Claims 1-21 are currently pending in the application. By this response, claim 17 is amended to correct a typographical error. The amendment does not add any new matter. For example, support for the amendment is provided in the claims as originally filed and at pages 2-5 of the specification. Reconsideration of the rejected claims in view of the amendment and the following remarks is respectfully requested.

Amendment is Proper for Entry

By this response, claim 17 has been amended to correct a typographical error that has come to Applicants' attention. Applicants submit that the correction of a minor typographical error does not raise new issues that would require further search and/or consideration. Moreover, Applicants have not added new claims without canceling an equal number of existing claims. Therefore, because Applicants believe that the following remarks place the application in condition for allowance, entry of the amendment is proper. Alternatively, Applicants submit that the amendment to claim 17 places the application in better form for appeal.

35 U.S.C. §102 Rejection

Claims 1-21 were rejected under 35 U.S.C. §102(b) for being anticipated by U. S. Patent No. 5,687,817 issued to Kobayashi *et al.* ("Kobayashi"). This rejection is respectfully traversed.

To anticipate a claim, each and every element as set forth in the claim must be found, either expressly or inherently described, in a single prior art reference. MPEP

§2131. Applicants submit that Kobayashi does not show each and every feature of the claimed invention.

Claims 1-11 and 21

The present invention relates to a disc brake for a vehicle that is used in vehicles such as automobiles and motorcycles. More specifically, the invention relates to the structure of pad retainers that are set in pad guide grooves of caliper support arms and movably support ears of back plates of friction pads. Implementations of the invention prevent the play of friction pad ears to reduce brake noise and suppress juddering. Moreover, implementations prevent the friction pads from falling off a caliper bracket in attaching the friction pads to the caliper bracket tentatively, thereby allowing the friction pads to be attached easily. Claim 1, recites in pertinent part:

> ... pad retainers disposed on the pad guide grooves, the ears of the friction pads being movably supported by the pad guide grooves and between receiving portions of the pad retainers,
>
> wherein the pad retainers each has:
>
> pad returning portions for urging the friction pads away from the disc rotor, the pad returning portions extending between the receiving portions and contact with the ear of the friction pads so as to urge the friction pads away from the disc rotor, and
>
> pad falling-off preventive portions for preventing the friction pads from falling off the caliper support arms.

Kobayashi does not disclose these features, and therefore does not anticipate the claimed invention.

The Examiner asserts that Kobayashi shows these features in FIGS. 13 and 14. Applicants respectfully disagree.

Kobayashi shows a disc brake including a caliper body 6 supported by a carrier 11 fixedly attached to a vehicle. Back plate 13 of friction pad 10 includes ears 15. Pad spring 31 is disposed in grooves 16 (FIGS. 12-14). The ears 15 are movably supported in the grooves 16 between guiding portions 31a of the pad spring 31. The pad spring 31 has first spring portions 32, 32a. The first spring portions 32, 32a extend between the guiding portions 31a (FIG. 14) and contact the ear 15 to urge the friction pad 10 away from the disc rotor 7 (FIGS. 15, 17). A torque bearing portion 31b extends downward from the guiding portions and supports a retainer portion 31c, which supports second spring portions 33, 33a. These second spring portions 33, 33a function in the same manner as the first spring portions 32, 32a to bias the friction pad 10 away from the disc rotor 7 (FIGS. 14, 16).

Applicants acknowledge that first spring 32a may constitute a pad returning portion for urging the friction pads away from the disc rotor. However, Kobayashi does not disclose pad falling-off preventive portions anywhere in the disclosure.

Contrary to the Examiner's assertion, spring 32a does not constitute a pad falling-off preventive portion, as recited in claim 1. Applicants initially submit that the Examiner is improperly using the same element of Kobayashi (i.e., spring 32a) to read on two separately recited elements of claim 1. Claim 1 recites both: (i) pad returning portions, and (ii) pad falling-off preventive portions. Kobayashi shows a spring 32a that constitutes a pad returning portion. Kobayashi, however, does not disclose an additional element that constitutes a pad falling-off preventive portion. Therefore,

Kobayashi does not contain each and every element of claim 1, and does not anticipate claim 1.

Still regarding the pad falling-off preventive portions, the Examiner asserts that "the outward force of member 32a, holds the pad in place when the pad approaches the loop portion" (Office Action, page 2). The Examiner further asserts that the portion of the spring member 32a that is toward the loop, acts as a pad falling off preventive portion because the force is pushing toward the other spring portion holding the other ear" (Office Action, page 3). Applicants respectfully disagree.

Even assuming *arguendo* that spring 32a can serve as two separately recited elements of the claimed invention, which Applicants do not concede, there is no disclosure or teaching whatsoever in Kobayashi that the spring 32a functions in the manner asserted by the Examiner. To the contrary, Kobayashi explicitly teaches that the spring 32a serves to bias the pad 10 away from the disc rotor. Figures 15 and 17 of Kobayashi, reproduced below, clearly shows that the net force Fo supplied by the spring 32a to the back plate 13 continuously urges the pad 10 away from the rotor 7.

Fig. 15

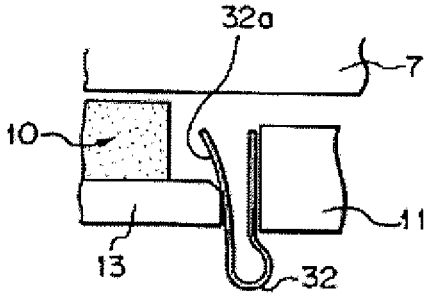
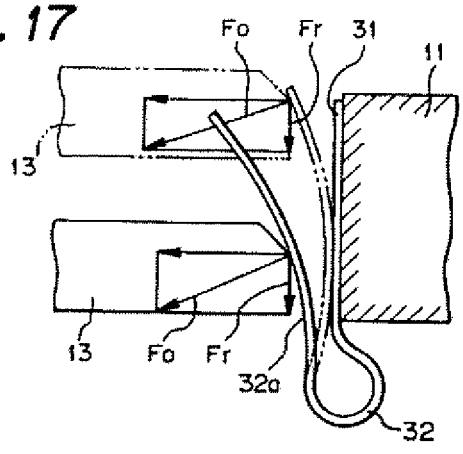


Fig. 17



This net bias force Fo, which continuously urges the pad 10 away from the rotor 7, is discussed in the following passages of Kobayashi

> The oblique surfaces 32a and 32a of the rear side pad spring 31 are also resiliently pressed against the end portion of the back plates 13 and 13 of the friction pads 10 at the inside of the disc rotor 7 (or the distal ends of the convex portions 15 of the back plates 13 of the friction pads 10) with a predetermined set load to bias the friction pads 10 away from the disc rotor 7, respectively. (Kobayashi, col. 11 lines 43-49);

and

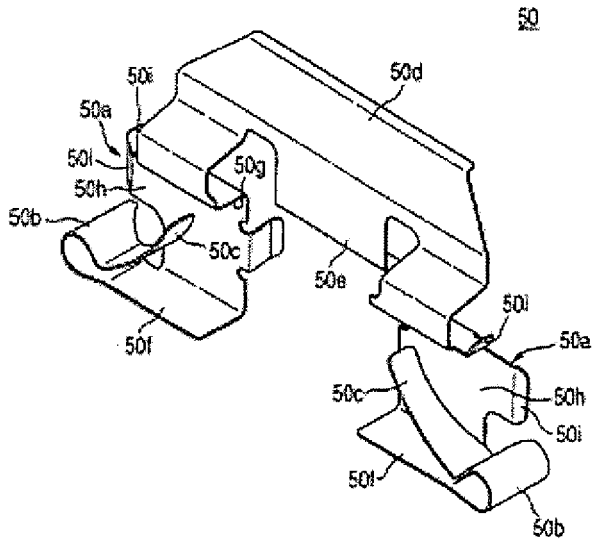
> Since the oblique surface 32a of the first spring portion 32 is bent, movement of the abutting portion between the oblique surface 32a and the back plate 13 toward the distal end of the oblique surface 32a allows an amount of deflection of the oblique surface 32a to be increased. This does not decrease a biasing force Fo in the first spring position 32 and a component Fr of the biasing force acting in a direction to move the friction pad away from the disc rotor 7, thereby enabling the friction pads 10 and 10 to be reliably moved away from the disc rotor 7 and preventing drag from being generated in spite of an amount of wear of the friction pads. (Kobayashi, col. 12 line 65 through col. 13 line 4).

Therefore, contrary to the Examiner's assertion, spring 32a only acts to bias the pad 10 away from the disc 7. There is no disclosure whatsoever that spring 32a provides a force that functions to prevent the pad 10 from falling off the caliper support arms, as recited in claim 1.

In contrast, implementations of the present invention provide both (i) pad returning portions and (ii) pad falling off preventive portions. For example, FIG. 11 of the present invention, reproduced below on the left, shows a pad returning portion 50c that urges the

pad away from the disc. Pad falling-off preventive portion 50b is hooked behind the pad returning portion 50c and prevents the pad from falling off of the caliper support arms.

FIG. 11



Illustrative Figure 11 of the Present Invention

Fig. 14

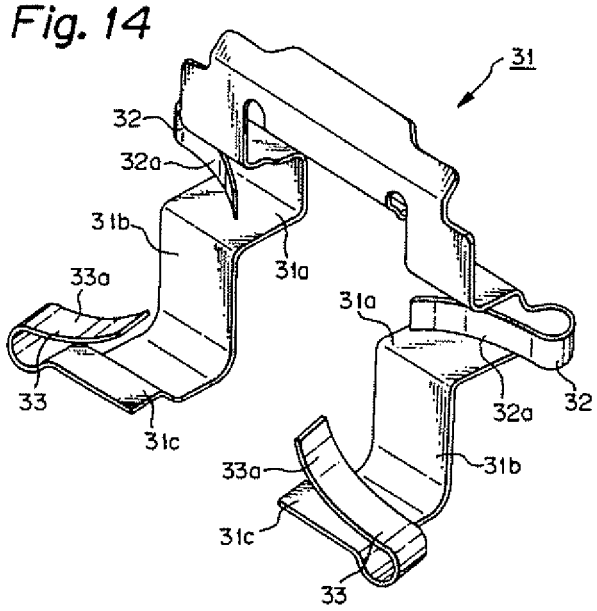


Figure 14 of U.S. Pat. No. 5,687,817 ("Kobayashi")

Kobayashi does not show both a pad-returning portion and a pad falling-off preventive portion. FIG. 14 of Kobayashi, reproduced above on the right, shows a pad returning portion 33a that urges the pad away from the disc. However, unlike the present invention, there is no pad falling-off preventive portion hooked behind the sloped pad returning portion 33a. Instead, in Kobayashi, the bend in the spring bends away from the pad returning portion, and provides no falling-off prevention whatsoever. With this construction shown by Kobayashi, as the pad returning portion biases the pad away from the disc, there is nothing to prevent the pad from falling off of the caliper support arms.

Therefore, Kobayashi does not contain each and every element of claim 1, and does not anticipate claim 1.

Applicants submit that claims 2-11 and 21 depend from allowable independent claim 1, and are allowable by virtue of the allowability of the independent claim. Moreover, Applicants submit that Kobayashi does not disclose many of the features of claims 2-11 and 21. Furthermore, Applicants note that the Examiner failed to address Applicants' arguments with respect to these claims that were submitted in the previous response dated June 16, 2006.

Regarding claim 9, Kobayashi does not disclose each of the pad falling-off preventive portions being bent back so as to form a circular arc, as recited in the claimed invention. As discussed above, Kobayashi does not disclose a pad falling-off preventive portion. Therefore, it is impossible for Kobayashi to disclose that the pad falling-off preventive portion is bent back to form a circular arc. Moreover, even assuming *arguendo* that a portion of Kobayashi's spring 32a constitutes a pad falling-off preventive portion, which Applicants do not concede, no portion of the spring 32a is bent back so as to form a circular arc (as recited in claim 9) and functions to prevent the friction pads from falling off the caliper support arms (as recited in claim 1). It is clearly seen from FIG. 17 of Kobayashi that there is a substantial gap between the circular portion 32 of the spring 32a and the back plate 13 of the pad. As such, the circular portion 32 will not come into contact with the pad 10, and cannot function to prevent the friction pads from falling off the caliper support arms. Therefore, Kobayashi does not contain the combination of features recited in claims 1 and 9.

Regarding claim 10, Kobayashi does not disclose the elastic loop portion is an other pad falling-off preventive portion, as recited in the claimed invention. Claim 10 depends from claim 2, which further defines the pad returning portions as including an elastic loop portion. As previously discussed, the Examiner asserts that the spring 32a constitutes the pad returning portions and pad falling-off preventive portions recited in claim 1. Even assuming *arguendo* that this assertion is accurate, which Applicants do not concede, the Examiner has not explained how the elastic loop portion constitutes an other pad-falling off preventive portion, as recited in claim 10. Put another way, the spring 32a does not constitute pad returning portion, a pad falling-off preventive portion, and an other pad falling-off preventive portion. Therefore, Kobayashi does not contain the combination of features recited in claims 1, 2 and 10.

Regarding claim 21, Kobayashi does not disclose the pad falling-off preventive portions extend from the inner receiving portion outward in a disc axial direction, as recited in the claimed invention. Claim 21 depends from claim 11, which further recites the receiving portions include an inner receiving portion and an outer receiving portion and the ears of the friction pads are movably supported by the pad guide grooves via the inner receiving portion and the outer receiving portion. Applicants note that the Examiner has failed to identify theses features in Kobayashi. Applicants respectfully request that the Examiner identify these features in the applied art if the rejection is to be maintained.

Claims 12-17

Claim 12 recites, in pertinent part,

> ... pad retainers disposed on the pad guide grooves, the pad retainers including a pad returning portion extending at least partially between receiving portions of the pad retainers and comprising an elongated strip which extends towards the disc rotor and is longer than a distance by which the ears of the friction pad is moved from a time when a lining of the friction pad is new to being fully worn.

Kobayashi does not disclose these features, and therefore does not anticipate the claimed invention.

The Examiner asserts that Kobayashi discloses the features of claim 12 in FIG. 13. Applicants respectfully disagree.

Initially, Applicants note that the Examiner has failed to even assert that Kobayashi shows an elongated strip which extends towards the disc rotor and is longer than a distance by which the ears of the friction pad is moved from a time when a lining of the friction pad is new to being fully worn, as recited in claim 12. Therefore, the Examiner has failed to establish a *prima facie* case of anticipation with respect to claim 12.

In any event, Kobayashi shows oblique surface 32a of first spring portion 32, 32a (FIGS. 14, 17). As the friction pad 10 is worn away, back plate 13 moves toward the disc rotor (col. 12, lines 48-56). However, Kobayashi does not mention that the length of oblique surface 32a is longer than the distance by which the ears move from a time when the lining of the friction pad is new to be fully worn. To the contrary, Kobayashi only mentions an indeterminate degree of wear, but does not mention the case of the lining being fully worn. Therefore, Kobayashi does not contain each and every element of claim 12, and does not anticipate claim 12.

In the Response to Arguments of the outstanding Office Action, the Examiner asserts:

> ... if the elongated strip (32a) were not longer than a distance by which the ears of the friction pad is to be worn, the caliper would not operate correctly and most likely the spring would end up to constantly bias the pad toward the rotor.

Applicants respectfully disagree. The above-noted statement is an implied assertion that Kobayashi inherently contains the recited features recited of the claimed invention. The Examiner is reminded of the following guidance that MPEP §2112 provides regarding inherency:

> The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).

Applicants respectfully submit that, based upon the above-noted passage of MPEP §2112, the Examiner's reasoning is improper on its face. The Examiner's assertion that "the caliper would not operate properly and most likely would ..." (emphasis added) clearly runs afoul of the mandate that "[i]nherency ... may not be established by

probabilities and possibilities." Therefore, the rejection of claim 12 is improper and should be withdrawn.

Applicants submit that claims 13-17 depend from allowable independent claim 12, and are allowable by virtue of the allowability of the independent claim. Moreover, Applicants submit that Kobayashi does not disclose many of the features of claims 13-17. Furthermore, Applicants note that the Examiner failed to address Applicants' arguments with respect to these claims that were submitted in the previous response dated June 16, 2006.

For example, regarding claim 15, Kobayashi does not disclose the inner receiving piece comprises a pad falling-off preventive portion that is bent back so as to form a circular arc, as recited in the claimed invention. As discussed above, Kobayashi does not disclose a pad falling-off preventive portion. Instead, Kobayashi only discloses first and second spring portions that bias the friction pad away from the disc rotor, but that do not function to prevent the friction pad from falling off the caliper support arms. Additionally, as further discussed above, no element of Kobayashi is bent back so as to form a circular arc and functions to prevent the friction pads from falling off the caliper support arms. Therefore, Kobayashi does not disclose the combination of features recited in claims 12, 14, and 15.

Regarding claim 16, Kobayashi does not disclose the pad retainers include an insertion guide which is bent outward from each outer receiving piece on a side opposite to the disc rotor, as recited in the claimed invention. Initially, Applicants note that the Examiner has not identified an element in Kobayashi that constitutes an insertion guide. Thus, the Examiner has failed to establish a *prima facie* case of anticipation with respect

to claim 16. In any event, Kobayashi does not show anything bent outward from each outer receiving piece on a side opposite the disc rotor. Therefore, Kobayashi does not disclose the combination of features recited in claims 12, 14, and 16.

Regarding claim 17, Kobayashi does not disclose the following features:

> the pad returning portion comprises a piece extending outward in the disc axial direction and is bent back to form a circular arc to form an elastic loop portion,
>
> the pad retainers include retainer portions having an inner receiving piece and an outer receiving piece that are opposed to each other in a direction that is inclined from a disc radial direction,
>
> the inner receiving piece comprises a pad falling-off preventive portion that is bent back so as to form a circular arc, and
>
> the elastic loop portion and the pad falling-off preventive portion are located on opposite sides of the ears.

Claim 17, which depends from claim 14, further defines the structure of both the pad returning portions and the pad falling-off preventive portions. The Examiner fails to even address these additional features in the outstanding Office Action. For this reason alone, the rejection is improper and should be withdrawn. Therefore, Applicants respectfully request that the Examiner clearly identify each of the features of claim 17 in Kobayashi if the rejection is to be maintained.

Claims 18-20

Claim 18 recites, in pertinent part,

> ... a pad returning portion comprising an elongated strip adapted to extend towards a disc rotor and an elastic loop portion on an opposing side thereof;

> a retainer portion having an inner receiving piece and an outer receiving piece that are opposed to each other in a direction that is inclined from a disc radial direction,
>
> a pad falling-off preventive portion that is bent back so as to form a circular arc, the pad falling-off preventive portion extending outward from the inner receiving piece, and ...

Kobayashi does not disclose these features, and therefore does not anticipate the claimed invention.

The Examiner asserts that Kobayashi discloses the features of claim 18 in FIG. 13. Applicants respectfully disagree.

Initially, Applicants note that the Examiner has failed to even assert that Kobayashi shows a retainer portion having an inner receiving piece and an outer receiving piece that are opposed to each other in a direction that is inclined from a disc radial direction. Furthermore, the Examiner has failed to identify a pad falling-off preventive portion that is bent back so as to form a circular arc, the pad falling-off preventive portion extending outward from the inner receiving piece. Even further, the Examiner failed to address Applicants' arguments previously submitted with respect to claim 18. For at least these reasons, the current rejection of claim 18 is improper and should be withdrawn. As such, Applicants respectfully request that the Examiner clearly identify each of the features of claim 18 in Kobayashi if the rejection is to be maintained.

In any event, Kobayashi does not disclose a pad falling-off preventive portion that is bent back so as to form a circular arc, the pad falling-off preventive portion extending outward from the inner receiving piece, as recited in claim 18. Even assuming *arguendo* that Kobayashi's guiding portion 31a constitutes an inner receiving piece, which applicants do not concede, this guiding portion 31a does not comprise a pad falling-off

preventive portion that is bent backward to form a circular arc and that extends outward. There is simply no such element shown in Kobayashi.

Applicants submit that claims 19-20 depend from allowable independent claim 18, and are allowable by virtue of the allowability of the independent claim. Moreover, Applicants submit that Kobayashi does not disclose many of the features of claims 19-20.

For example, Kobayashi does not disclose the elongated strip is longer than a distance by which ears of a friction pad are moved from a time when a lining of the friction pad is new to being fully worn, as recited in claim 19. As discussed above, Kobayashi makes no mention of the pad position when fully worn. Therefore, Kobayashi cannot disclose that the elongated strip is longer than a distance that the ears travel between when the pad is new and fully worn.

Accordingly, Applicants respectfully request that the rejection over claims 1-21 be withdrawn.

CONCLUSION

In view of the foregoing remarks, Applicants submit that all of the claims are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue. The Examiner is invited to contact the undersigned at the telephone number listed below, if needed. Applicants hereby make a written conditional petition for extension of time, if required. Please charge any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 19-0089.

Respectfully submitted,
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